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ABSTRACT

This paper explains how a sociology teacher used a Guided Design approach to teach students in an introductory college level sociology course about the process and content of sociology and about problem solving. In a Guided Design approach, topics are presented as problems which students can solve by using prepared reading materials and by gathering additional information. Frequent feedback is offered to students as they follow 12 basic steps--gathering information, identifying the problem, stating objectives, stating constraints and assumptions, generating possible solutions, making a decision, analyzing, synthesizing, evaluating the solution, reporting results and making recommendations, implementing the decision, and checking results. The problem in the sociology course discussed in this paper centered on controversy over a basic competency test required for high school graduation. Students in the sociology course were directed to divide into groups of six or seven and assumed the roles of members of a committee set up to answer test-related complaints by educators, minority parents, and community members. After the students generated several possible solutions to the test crisis, they received a final round of feedback from the teacher, decided which solution to implement, and prepared a final report for which they received a group grade. Student evaluations of the course indicated that they felt the Guided Design approach to be interesting and valuable. Further, comparison of test scores and essay assignments of students who participated in Guided Design indicated that they did just as well in terms of quality and better in terms of quantity of substantive knowledge than students in a course taught by more traditional methods. (DB)

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A GUIDED DESIGN SYSTEMS APPROACH TO TEACHING SOCIOLOGY

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ABSTRACT

The paper relates the experience of an instructor in sociology who implemented the Guided Design approach to teaching. In Guided Design, topics are presented to students as problems. Reading materials are prepared which convey information that the students need to solve these problems and the students are required to gather additional information. Instruction-Feedback sets are written which assist the students to approach the problem in an ordered fashion from a sociological perspective. The Guided Design format provides a structured method for problem solving which is beneficial for both the instructor and the students. It allows one to integrate the goals of teaching substantive subject matter and the decision making skills required to apply that subject matter to actual problems.

A Guided Design Systems Approach to Teaching Sociology

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When a man is starving you can give him a fish and feed him for a day or you can give him a fishing pole enabling him to feed himself for the rest of his life. All too often teachers give starving students fish which keep them alive for a day but which also keeps them dependent upon the teacher. There are other teachers who give students fishing poles but deny them the fish they need in order to have the strength to use the poles.

The difference is between substantive subject matter and process skills. It is extremely difficult to teach students both the substantive subject matter of sociology, the facts of sociology, and the skills which they need to gather their own facts or to apply those facts to new situations. Because the task is so difficult we teachers sometimes do not even try. We either teach our students about sociology or we teach them how to do sociology without any relation to practical reality.

This situation is not unique to the discipline of sociology but is true of just about any discipline, even engineering. That is probably why an engineer by the name of Charles Wales at West Virginia University developed an educational innovation called Guided Design.

Guided Design is an educational strategy which allows a teacher to model the professional methods of her discipline and teach substantive subject matter at the same time. The basic goal of Guided Design is to change the teaching process from one where we teach our students about sociology to one where we teach them how to be sociologists. It is an

attempt to show students that sociology is more than a body of knowledge; but that it is also a method of causal analysis and explanation.

HOW IT WORKS

The instructor designs an open-ended problem to which the students are to find solutions. These problems have no one correct solution but they do require the student to think as a sociologist does and to use sociologically relevant information in order to arrive at a viable solution.

The instructor writes a one or two page scenario which details a situation that is perceived as an undesirable condition. This situation is presented to the students who are grouped in teams of five to seven persons. The students role play that they are a committee or some group which has been delegated the responsibility to explore this situation and then to make a report to the person who formed the group.

Immediately the students feel that it is their job to turn this undesirable condition into a desirable one. In other words, they attempt to solve the problem as the first step. After discussing the problem among themselves and generating several possible solutions, they realize that they are going nowhere fast. Since the instructor has been circulating among the various groups, she should realize when this stage has been reached and present them with a written feedback of their discussion which had been prepared earlier.

The feedback should lead them to the conclusion that the first step in problem-solving is to define the problem. Experience has shown that this first step is the most difficult and sets the tone for the other steps to follow. When the students feel that they have adequately defined the problem, they report to the instructor for feedback. At times the instructor

may give them an oral feedback and ask them to continue the process of defining. At other times and eventually in all cases, the students will be presented with written feedback which has the instructor's definition of the problem. The students are free to disagree with that definition or to modify it. In most cases, the students see that the instructor has defined the problem well and agree to use that definition.

At this point Guided Design differs from an unstructured plan to solve a problem. It provides both the instructor and the students with a precise, detailed, structured method for solving a problem. To use Guided Design is to use the steps shown in Exhibit 1. The use of these steps ensures that the problem will be attacked in a systematic manner and increases the chances for successful solution. Unfortunately, most of the time, problem solving is attempted in a haphazard manner in which success is problematic.

For example the first Guided Design set that I did was about a real problem which many persons think defies solution. I wrote a description of the setting and presented it to the students. The situation is that in response to the demands of business, students must pass a competency test in order to graduate from high school. Black parents are upset because their children are failing the test at a higher rate than are white students. The superintendent feels that since the schools have been desegregated for the past ten years that nothing more can be done. However, to placate the black parents he appoints a parent-teacher committee to study the situation.

Students are divided into groups of five to seven students each and told to pretend that they are the committee and that they will eventually have to present a report to the superintendent (instructor) on their study of the situation.

EXHIBIT 1

STEPS IN DECISION-MAKING

* Gather Information

This step is listed first because it is usually a component of each step in the decision-making process. It involves a search for pertinent information from the persons own background, books, printed matter, media, other people, experts and experimental work.

A. Identify the Problem

Someone may ask you to solve a problem or you may discover it by yourself. In either case you must learn to look beyond the symptoms of the problem to find out what is wrong.

B. State the Basic Objective or Goal

The Basic Objective focuses your thoughts on the real problem to be solved. It should be a statement which is broad enough so no reasonable possible solution is eliminated.

C. State the Constraints, Assumptions and Facts

Constraints are factors which limit the outcome of the project and cannot be changed. Assumptions are applied to factors which can be changed to simplify the problem and make it solvable. Facts are statements of things that are known.

D. Generate Possible Solutions

This is the time for creative thinking. Don't prejudge ideas as they are generated; get all the different thoughts you can.

E. Evaluate and Make a Decision

Determine which possible solution is most likely to solve the problem.

F. Analysis

Separate the chosen possible solution into meaningful elements. Determine and gather the information you need to develop each element.

G. Synthesis

Combine the elements to create a detailed solution.

H. Evaluate the Solution

Does it satisfy the basic objective; is it feasible, practical, economical, safe, legal and moral?

I. Report the Results and Make Recommendations

Prepare a report that describes what you have done and decided. Think about the information needs of the person who will read the report. Don't write what isn't necessary.

J. Implement the Decision

What should be done now? Should we select a new basic objective, perform additional decision-making or research work, or begin to implement the recommended solutions?

K. Check the Results

Did the solution work? Is further 'design' effort required?

Source: Wales and Stager, 1978.

When the students meet they offer all kinds of reasons why the problem exists and what they should do about it. After they have discussed it for a while, the instructor gives each student an instruction set which has dialogue between the committee members. The committee members sound very much like the students; all kinds of reasons and solutions are offered. At the end one committee member suggests that they are getting nowhere and should define the problem. Defining the problem is clearly indicated as the task which the students are to perform.

Once again the students meet to play the role of the committee which is to define the problem. When they feel that they have done that, they present their definition to the instructor. The instructor has three options; accept their definition, send them back to do some more discussing, or work with them to guide their thinking. At some point their definition is accepted and the students are given feedback-instruction. The feedback is a dialogue between the mythical committee members which shows how they arrived at the definition and what their definition is. The instruction is a dialogue between the committee members which explains how they decided that their next step is to state the basic goal of their work. The students are clearly instructed that their next step is likewise to state the basic goal. In the example we are using it was decided that the problem was the differential achievement levels of black and white students at all grade levels.

The most difficult and most time consuming part of implementing Guided Design in class is the writing of the instruction-feedback sets. It is the instructor's responsibility to give the students the appropriate guidance in this decision-making process. When the students are to define the prob-

lem, they must be instructed in writing to define the problem. When the students are to state the goal, they must be instructed in writing to state the goal. For every step that the students are to take they must be instructed in writing to take it. If they are not so instructed, they soon do not do what the instructor wants them to do and both parties become very disappointed. The instructor also has the responsibility to provide the students with appropriate feedback in writing on each step that they take.

The feedback received by the students is a description of what the mythical committee decided to do about the problem. It is not a direct response to the discussion of the students. These feedbacks are prepared well in advance and are to illustrate how one group went about solving the problem which the students have been given.

The most common response to the set of instructions which asks the students to state the goal is that their goal is to solve the problem. However, there are numerous points in the solution of a problem. At which point do they want to stop in the solution process?

At first the goal for the problem mentioned seems easy. The discussion in the instruction explains that two possible goals are to depress white student achievement or to lower the test standards so that more black students can pass. Neither one of these possible goals is accepted by the students. They now see that stating the goal may not be so easy after all.

After meeting as the committee and arriving at a goal statement, they return to the instructor. Again the instructor has the three options. Eventually the students receive a feedback which contains the committee's conversation on how it arrived at the goal of increasing the achievement levels of black students without decreasing the achievement levels of white

students. At the same time the students receive an instruction through committee conversation that they are to generate as many solutions as they possibly can. The students are free to disagree or to modify the goal.

At this point, the developer of the method, Dr. Wales, would give the students written instructions to state the constraints, assumptions and facts which apply to their goal and which would affect any possible solution. I have found that it is better to save this step until later. Instead I prefer that the students generate possible solutions to the problem always keeping in mind the goal that they are trying to accomplish. This step is to be one which encourages creative thinking. They are not to pre judge or evaluate any of the possible solutions at this time. Any idea that is generated is considered as valid as any other idea at this time.

Although the students are free to gather information on the problem at any time at this point they are required to do so. There have been assigned readings and lectures on the general area covered by the problem. Therefore, they should already have a general background on the area. Now when they report to the instructor with a list of their possible solutions, the written feedback to those solutions contains an instruction that they are to gather facts about those solutions. Have those possible solutions been tried before? Why or why not? With what amount of success? If successful, why? If not successful, why? They must go to the library and gather the information needed to answer any and all questions about the advantages and disadvantages of the possible solutions. The feedback also contains a list of possible solutions which the instructor has generated. The students are free to reject any or all of the instructor's possible solutions, to modify them, to combine with or to add them to the ones that

they generated. There is usually a great deal of overlap between the instructor generated and student generated solutions. When the students learn that they must do library research on each solution in the list of possible solutions, they eventually generate a list which includes the same number of solutions as there are members in the group, i.e. five group members means five possible solutions. Each group member then gets one possible solution to research.

After they have researched their solutions, they report to the group so that all members get to know about all of the possible solutions. As a feedback the instructor presents the students with information on the solutions that she has generated.

When the students have generated several possible solutions, they receive feedback from the instructor which lists the possible solutions that she generated such as (1) return to segregated schools, (2) separate black students who are not working up to standard into remedial classes, (3) have teachers take ethnic awareness training, (4) work with black parents on how to motivate their children properly, and (5) let black children start school earlier than white students.

Since some of the solutions may be unconstitutional and others may not be feasible, the students are instructed to gather information on the possible solutions. Have these solutions been tried and with what success? The students are also instructed to state the assumptions and constraints of each solution.

When the students gather information they find that while segregated schools are unconstitutional, separate schools for black students which are controlled by black professionals and parents have been successful in most

cases. They find instances where remedial classes have worked and not worked and why. They discover what the results have been for ethnic awareness training. Possible solution number four has already been tried as a government program called Homestart with documentation on its success or lack of. Possible solution number five is merely another way to say Headstart on which extensive research studies have been done. A sixth possible solution, desegregation, is also mentioned. The sociological justification, not legal requirement, for school desegregation as expounded in the Coleman Report was that the intermixing of student bodies should have a positive effect on the achievement levels of black students. Students gather information on why it did not work.

The thing that I as an instructor want them to discover at this point is that there is a clear distinction between desegregation, the physical mixing of different ethnic groups, and integration, the social mixing of different ethnic groups. Schools which are merely desegregated do not raise the achievement levels of black students; integrated schools do.

The feedback on this gather information step is a bibliography which lists sources for the possible solutions. The feedback ensures that they have not missed any sources which I consider important but still requires them to do the actual library research.

The next instruction is for students to state the constraints, assumptions and facts which would affect a solution to the problem. This step is the one that Dr. Wales places earlier in the process. The difference in the preferred placement of this step probably occurs because of the difference in the type of problems faced by engineering and sociology. In engineering there are certain physical laws which cannot be changed and there-

fore would serve as a constraint on the solution. In sociology any and all regulations within the legal system and institutionalized ways of doing things can be changed. In the mind of the student such laws and institutionalized ways often become reified. If the students list the constraints before they generate possible solutions, their solutions reflect that reification and unnecessarily limit their thinking. Therefore, it is important that the instructor clearly define the power of the group that the students are playing. A local school board is not free to change Supreme Court decisions on desegregation or officially sanctioned prayer in the schools. A local school board is free, however,to change many structural aspects of the schools, e.g. authority relationships between teachers and principals.

After the students have generated a list of items which would affect any solution to the problem, they receive a feedback which has a list of items that the instructor feels would be constraints and assumptions. The next instruction asks the students to make a "table" which shows the cross tabulation of the constraints, assumptions and facts with their possible solutions.

The feedback shows the instructor's cross tabulation of her constraints with her solutions. The next instruction is for them to make a decision as to which of the possible solutions or combination of possible solutions is the best solution and why.

After a decision has been made on which solution to implement, Dr. Wales has the two steps of analysis and synthesis. I incorporate those two steps in a third step which is to evaluate the solution. The original structure calls for students to compare their solution with the basic objectives and evaluate the solution. I have found that students tend to do this step when they make a decision about which possible solution to choose. Therefore, for most problems, I have students gather information again under this step.

This time, however, the information gathered is to be field research of some type. Simple observations of real life situations suffice for the field data.

If they choose separate schools for black students, then they must get information from a local private school which is predominately black. If they choose remedial classes, then they must visit some of these classes. If they pick teacher awareness training, then they must learn what local school districts are doing in this area and ascertain its effectiveness. If they opt for Homestart or Headstart, then they must go to the local Headstart office and seek information. If they say that integration is the answer, then they must go to some local schools which are desegregated and measure how integrated these schools are.

Before they are allowed to go into the community to do this field research, they must develop appropriate measures and conceptualize the variables that are important. The students need to develop an observation schedule or an interview schedule which is designed to focus their information gathering.

They receive individual oral feedbacks per group on their schedules before they are allowed to go to the field.

When they have gathered their information, they again receive individual feedbacks per group.

Their final instruction is to prepare a report to the superintendent detailing the process undertaken by the committee and arguing for the implementation of their solution.

This report is evaluated and the students are given a group grade. The students are not graded on the "correctness" of their solution but rather on its logical consistency and the documentation, both library and field, of

its potential to actually solve the defined problem. Students may receive an individual grade which is higher or lower than the group grade based on that individual student's contribution to the group as judged by the group.

EVALUATION

How does one evaluate the effectiveness of a teaching method? Did the students learn what they were supposed to learn, as defined by the instructor, using this method better than they would have using another method? My subjective answer to that question is yes. Structural constraints prevented the use of an experimental design. It seemed ridiculous to pretest students on their knowledge of sociology of education and there is not enough student demand to justify offering two sections of the course so that one could have an experimental and control group. The best that could be done was to compare the written work done by students who used Guided Design one semester with the expectations that the instructor normally has for students who have taken the course in the past. Using that criteria, students who used Guided Design did just as well in terms of quality and better in terms of quantity of substantive knowledge.

Two questions on standardized course evaluations that students complete every semester ask about the amount of learning from the course and the ability of the course to generate and maintain interest. Responses to those questions from the Guided Design students were 4.27 and 4.32, respectively, on a five point scale. The department mean for those questions was 3.61 and 3.55, respectively. The means for the Guided Design course are not statistically significant when compared to the departmental means nor are they significantly different from the means that were found for those questions from sections of the course taken in prior years. However, on an absolute basis they are quite high.

Therefore both instructor and student perceptions are that the amount of substantive learning using Guided Design was high and comparatively higher than sections which had not used Guided Design.

It is also subjectively perceived by the instructor that the students did much more and better library research and field research using Guided Design. Students definitely were exposed to a systematic method for problem-solving using Guided Design which they had not been exposed to in previous courses.

Another method of evaluation was the use of student essays on their perceptions of Guided Design. All students were required to write a five page evaluation of the Guided Design method. They were promised that these evaluations would not be read until after the grades had been given to the Registrar and there is no evidence that any students were apprehensive that their remarks would have any influence whatsoever on their grade for the course. This type of evaluation allowed students to express themselves more fully than responses to closed questions.

There were no instructions for this evaluation, since I did not want to bias their perceptions. However, what I looked for was to see if they perceived that Guided Design had met its objectives. Its objectives were to teach students substantive material and to provide them with a sociological method for problem-solving. Most students responded to those concerns without any prodding and all of the responses were basically positive.

Students perceived that the process was valuable as illustrated by the following comments:

> "The design was an adaptation of the scientific method which is commonly used in the other sciences. This was one of the feature's best points."

"I feel that the most important areas of learning for a graduate student do not include specific content, but rather focus on the ability to use research modalities and the development of perspectives which assist the learner in applying research. While content becomes obsolete rapidly, the application of research should be a life-long process. The traditional classroom setting can foster the development of perspectives, but unless a research project is assigned, the learner has little opportunity to use research as a part of the problem-solving process. The guided learning strategy ... (offers) ... the learner both perspectives and research skills."

"(T)he group problem-solving process as realistically applied is important to master, and I did learn to use that process."

"I believe the process that we went through was the strength of the projects."

It is also interesting to read what the students felt were the specifics of the method that were so valuable and why Guided Design worked rather than some other method which would have just given them a problem to solve or a research project to do. The following student comments speak to that point.

"In starting with a critical evaluation, I would like to first state the most positive point about the Guided Design projects: they demanded identification and clarification of the problem before proceeding into subsequent areas of design. ...With the Guided Design, everyone was kept on track."

"Identifying the problem was perhaps the most valuable part of the Guided Design for me."

"Although at the beginning our efforts were far from exemplary of the problem solving approach, we soon became more effective. The improvement came primarily as a result of the feedback provided with each step as it was completed."

"I learned that it is important to always define the problem before trying to work out solutions. It seems like in our daily lives we try to solve ... problems we haven't even defined."

The students also report that they learned substantive information as well and that there is substantive information available on most topics.

"I learned that research should also be done to help you make the solutions for a problem. It is always important to see if someone else has done research on (the) problem you are trying to solve."

"Another personally valuable aspect of the Guided Design projects was the research section. I did not realize that there was as much available sociological research in the area of education as is available. ... It has also taught me where to look for help in solving those problems."

An interesting side effect of Guided Design was the group work. Students tried to find something wrong with the Guided Design method. They reported or alerted me to potential problems in the method. That potential problem was usually something that could happen because of the failure of the group members to perform adequately. While they warned me of this danger, none of them reported that this situation actually occurred in their group. In fact one of the most enjoyable aspects of the Guided Design projects was the group interaction. Is it just coincidence that in four groups totaling 27 students that there were no reported problems of group interaction or is there something inherent in Guided Design which handles these problems?

"I honestly feel that I learned as a result of this process, and I know I learned a great deal from my other group members. I do believe that this process was basically beneficial."

"I feel that these projects have taught an excellent pattern for problem solving along with demonstrating that solving the types of problems we confront in school involves teamwork on the part of those working to solve the problem."

"I learned that working together in a group was very meaningful."

An actual problem that students did mention was that there were too many projects; they got tired of doing the same basic thing. They even requested that I lecture more! I sensed this complaint and did not do all of the projects that I had planned. In a semester I would limit the number of projects to three maximum.

"After the initial exposure, the process became repetitive. The problems involved, while equally important, seemed to become

more similar to myself and to the other group members. This created a lack of motivation on our part."

I strongly encourage the use of Guided Design as a teaching strategy because I agree with the following student comment:

"The guided learning technique offers advantages not inherent in traditional methods. Application of group problem-solving process to research sociological problems assisted in developing and applying perspectives about the sociology of education."

References

Wales, Charles E., and Robert A. Stager
1978 The Guided Design Approach. Englewood Cliffs, New Jersey: Educational Technology Publications.